

REMARKS


Claims in the case are 1-13, upon entry of the present amendment.
Claims 10-13 have been added, and Claims 1-9 have been amended herein.

Claims 1-9 of the above-identified patent application have been amended as to form, for example, by introducing indefinite and definite articles, replacing "characterized in that" with --wherein--, introducing gerunds into process Claim 1, and converting multi-dependent claims to dependent claims. Basis for added Claims 10 and 11 is found in original Claim 4, and at page 4, lines 23-25 of the specification. Basis for added Claim 12 is found in original Claim 5, and at page 4, lines 20-21 of the specification. Basis for added Claim 13 is found in original Claim 6, and at page 5, lines 1-10 of the specification.

The title of the patent application has been amended to correspond with the related PCT International Patent Publication No. WO 00/32636. Page 1 of the application has been amended herein to introduce cross reference information. The cross reference information is presented in accordance with 37 C.F.R. 1.78(a)(2) (Federal Register / Vol. 65, No. 183 / Wednesday, September 20, 2000; Changes to Implement Eighteen-Month Publication of Patent Applications; Final Rule). An abstract of the patent application is included herewith on a separate page.

The amendments presented herein do not represent the entry of new matter into the application. Applicant respectfully request entry of this amendment.

Respectfully submitted,

By 
James R. Franks
Agent for Applicants
Reg. No. 42,552
Bayer Corporation

100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-8339
FACSIMILE PHONE NUMBER:
(412) 777-8363

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050301

Mo6342

VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION: (Marked-Up)

The following is a version of the title at the top of page 1, with markings to show changes made thereto in the present Preliminary Amendment.

[Process for the production of low-viscosity water-soluble cellulose ethers.]

METHOD FOR THE PRODUCTION OF LOW-VISCOUS WATER-SOLUBLE CELLULOSE ETHERS

IN THE CLAIMS: (Marked-Up)

The following are versions of the amended claims with markings to show changes made thereto in the present Preliminary Amendment.

1. (Once Amended, Marked-Up) A process [Process] for the production of low-viscosity water-soluble cellulose ethers by oxidative decomposition of higher-viscosity cellulose ethers with hydrogen peroxide, [characterised in that,] comprising:

- (a) forming, under conditions of intensive mixing and at temperatures of 65 - 125°C, a mixture comprising, [the] (i) higher-viscosity cellulose ethers, [are intensively mixed with] and (ii) an aqueous solution of hydrogen peroxide [at temperatures of 65 - 125°C], the proportions of the mixture being selected in such a way that the hydrogen peroxide content is 0.1 - 10 wt.% in relation to the dry cellulose ether, the solid content of the mixture is no lower than 25 wt.% in relation to the total quantity of the mixture; and
- (b) agitating continuously the mixture of step (a) [is then agitated continuously] at temperatures of 65 - 125°C until approximately at least 90% [at least] of the hydrogen peroxide has been spent.

2. (Once Amended, Marked-Up) The process [Process according to claim] of Claim 1 [, characterised in that] wherein mixing with the aqueous hydrogen peroxide solution is carried out step-by-step.

3. (Once Amended, Marked-Up) The process [Process according to claim] of Claim 1 [or 2, characterised in that] wherein the mixture is agitated continuously at temperatures of 75 - 100°C.

4. (Once Amended, Marked-Up) The process [Process for the production of low-viscosity water-soluble cellulose ethers according to any one of claims] of Claim 1 [to 3, characterised in that] wherein 0.1 to 10 wt.% hydrogen peroxide in relation to the dry cellulose ether[, preferably 0.2 to 2.5 wt.%, in particular 0.5 to 1.8 wt.% are] is used.

5. (Once Amended, Marked-Up) The process [Process for the production of low-viscosity water-soluble cellulose ethers according to any one of claims] of Claim 1 [to 4, characterised in that] wherein a higher-molecular cellulose ether with a solid content of 35 - 80 wt.%, [preferably 40 - 55 wt.%,] in relation to the total quantity of cellulose ether and solvent, is used.

6. (Once Amended, Marked-Up) The process [Process for the production of low-viscosity water-soluble cellulose ethers according to any one of claims] of Claim 1 [to 5, characterised in that] wherein before, during or preferably after the decomposition reaction, the pH value of the mixture is set at more than 4.5, [preferably 6 to 7,] by mixing it with an aqueous solution which has a pH of 5 to 12 and optionally contains, in solution, the hydrogen peroxide required for the decomposition reaction.

7. (Once Amended, Marked-Up) The process [Process for the production of low-viscosity water-soluble cellulose ethers according to any one of claims] of Claim 1 [to 6, characterised in that] wherein the water soluble cellulose ether is selected from carboxymethyl cellulose, hydrophobically modified carboxymethyl cellulose, hydroxyethyl carboxymethyl cellulose, sulfoethyl cellulose, hydrophobically modified sulfoethyl cellulose, hydroxyethyl sulfoethyl cellulose, hydrophobically modified hydroxyethyl sulfoethyl cellulose, hydroxyethyl cellulose, hydrophobically modified hydroxyethyl cellulose, methyl cellulose, methylhydroxyethyl cellulose, methylhydroxyethyl sulfoethyl cellulose, hydrophobically modified methylhydroxyethyl cellulose, methylhydroxypropyl cellulose, hydroxypropyl cellulose [or] and mixtures thereof.

8. (Once Amended, Marked-Up) The process [Process for the production of low-viscosity water-soluble cellulose ethers according to any one of claims] of Claim 1 [to 7, characterised in that] wherein the water-soluble cellulose ether is selected from methylcellulose, methyl hydroxyethyl cellulose, hydrophobically modified methyl hydroxyethyl cellulose, methyl hydroxypropyl cellulose,

hydroxypropyl cellulose, [or] mixtures thereof, and water-wet filter cakes of these cellulose ethers, as obtained after washing and separation[, are used].

9. (Once Amended, Marked-Up) The process [Process for the production of low-viscosity water-soluble cellulose ethers according to any one of claims] of Claim 1 [to 7, characterised in that] wherein the water soluble cellulose ether is selected from methyl hydroxyethyl cellulose, [or] methyl hydroxypropyl cellulose, and water-wet filter cakes of these cellulose ethers, as obtained after washing and separation[, are used].

10. (Added) The process of Claim 1 wherein 0.2 to 2.5 wt. % hydrogen peroxide, in relation to the dry cellulose ether, is used.

11. (Added) The process of Claim 1 wherein 0.5 to 1.8 wt. % hydrogen peroxide, in relation to the dry cellulose ether, is used.

12. (Added) The process of Claim 1 wherein a higher-molecular cellulose ether with a solid content of 40 to 55 wt. %, in relation to the total quantity of cellulose ether and solvent, is used.

13. (Added) The process of Claim 6 wherein the pH value of the mixture is set at 6 to 7.